

What is claimed is:

1. An apparatus adapted for chest drainage comprising:

an tube characterized by a proximal end, a distal segment adapted for insertion into the chest and a lumen communicating from the proximal end to the  
5 distal end;

a plurality of perforations at the distal end of the tube communicating between the lumen and the outside of the tube;

10 a connector at the proximal end of said tube for connecting the lumen of said tube to drainage apparatus;

a cutter located at the distal end of said tube;

15 an obturator or blunt tip capable of selectively protecting the sharp edge of said cutter; and

means for longitudinally translating the cutter relative to the obturator such that the cutter may be selectively advanced to a position distal to the obturator or blunt tip.

20 2. The apparatus of Claim 1 wherein said cutter is retractable into the lumen of said tube.

3. The apparatus of Claim 1 wherein said cutter is removable from the lumen of said tube.

25 4. The apparatus of Claim 1 wherein said obturator or blunt tip is removable from said tube.

5. The apparatus of Claim 1 wherein said tube is packaged inside a sterile barrier that may be pierced with said cutter.

6. The apparatus of Claim 1 wherein said cutter is operably connected to a handle located near the proximal end of said tube.

7. A method of achieving chest drainage at an incision site on the chest wall of a patient, said method comprising the steps of:

10 providing a protective patch having one or more straps extending therefrom, adhering a protective disc with its center over the incision site;

making an incision or a hole partially through the thickness of the chest wall at the incision site;

15 thereafter bluntly dissecting through the remainder of the thickness of the chest wall at the incision site;

20 providing a chest tube that is sealed within a sterile barrier package, said chest tube characterized by a proximal end, a distal segment adapted for insertion into the chest and a lumen communicating from the proximal end to the distal segment;

25 manipulating a handle on the proximal end of a chest tube to expose a sharp edge on the distal segment of said chest tube;

puncturing the sterile barrier package containing said chest tube;

advancing said chest tube out of said packaging;

withdrawing said sharp edge on the distal end of the  
chest tube so that it is no longer exposed;

inserting said chest tube into the prepared incision  
in the patient's chest;

removing the sharp edge and its protective cover from  
the chest tube;

attaching said chest tube to straps attached to the  
protective patch to hold the chest tube in place;

10 and

enabling drainage of liquid through the chest tube  
from the patient's chest cavity.

15 8. The method of Claim 7 wherein the sharp tip and its  
protective cover are removed from the chest tube prior to  
insertion into the patient.

9. The method of Claim 7 wherein the initial incision in the  
chest wall is made with a punch.

10. The method of Claim 7 wherein the straps attached to  
the protective patch are attached to the chest tube by way  
20 of adhesive.

11. The device adapted for restraining a medical device  
against a patient comprising:

a disc or other flat surface that is adhered to the  
skin of the patient and,

25 at least one strap affixed to said disc that may  
further be affixed to the medical device.

12. The device of claim 11 wherein said medical device is a chest tube.

13. The device of Claim 11 wherein said strap is affixed to the medical device using adhesives.

5 14. The device of Claim 11 wherein said disc further comprises a clearly defined central region with partially completed slits created therethrough.

10 15. The apparatus of Claim 11 wherein said disc further comprises antimicrobial agents on the side of the disc that is adhered to the patient.

16. The apparatus of Claim 1 wherein said tube further comprises a malleable element disposed along at least a part of the length of said tube.

15 17. The apparatus of Claim 1 wherein said cutter is a circular cutter with a front cutting edge that is disposed at an angle of between 5 degrees and 60 degrees from the plane orthogonal to the axis of the tube.

18. An apparatus adapted for chest drainage comprising:

20 an axially elongate tube further comprising a proximal end, a distal end and a through lumen;

a plurality of perforations at the distal end of said tube communicating between the through lumen and the outside of the tube;

25 a connector at the proximal end of said tube for connecting the through lumen of said tube to drainage apparatus;

a package further comprising an outer package and an inner package;

5 a removable obturator or blunt tip, coaxially mounted to the distal end of said tube, wherein said removable obturator or blunt tip is able to perforate or fenestrate said inner packaging of the chest drainage apparatus.

19. The apparatus of Claim 18 wherein said disc is pre-attached to said device.

10 20. The apparatus of Claim 18 wherein said disc is integral to a portion of the packaging of said device.

21. A device adapted for chest drainage comprising:

a drainage tube with a proximal end and a distal end and a central through lumen;

15 a rigid or semi-rigid trocar through which said drainage tube is inserted; and

a limit stop disposed in fixed relationship to the trocar to prevent the trocar from extending beyond a predetermined depth into the chest cavity.

20 22. The device of claim 21 further comprising a disposable collection chamber, and wherein the drainage tube is pre-attached to a disposable collection chamber.

23. The device of claim 21 wherein the trocar has a blunt distal end.

25 24. The device of claim 21 wherein the trocar comprises a deflector which causes the chest tube to exit said trocar

to the side and not parallel to the long axis of the trocar.

25. The device of claim 21 wherein the limit stop is configured to stop against the skin of the patient.

5 26. The device of claim 21 wherein the limit stop is configured to stop against the ribs or tissue underlying the skin.

27. The device of claim 21 further comprising a retractable blade to perform an initial skin incision.

10 28. A method of placing a tube into a patient comprising;

providing a tube characterized by a distal segment adapted for insertion into the patient and a proximal segment;

15 packaging the tube in a pouch, said pouch having a patch disposed thereon, said patch being adapted to be adhesively secured to the patient;

20 while maintaining the pouch substantially intact, applying the patch to the skin of the patient; and advancing the distal segment out of the pouch while inserting the distal segment of the tube through the patch and into the patient.

29. A method of claim 28 further comprising;

25 providing the tube with a blunt obturator slidably disposed within the tube, said blunt obturator having a tip adapted for blunt dissection of body tissue;

advancing the tip of the obturator along with the tube, while maintaining the pouch substantially intact, into the patient;

- 5 removing the obturator from the tube.